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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/985,855 | 11/06/2001 | Yoji Okazaki | Q66552 | 4386 |

7590 05/07/2003
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EXAMINER

WOOD, KEVIN S

ART UNIT PAPER NUMBER

2874

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/985,855

Applicant(s)

OKAZAKI ET AL.

Examiner

Kevin S Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) 2-54 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to because Fig. 6A, Fig. 6B, Fig. 7A, and Fig. 7B contain dimensions without units. The dimensions should include units in order to avoid confusing the dimensions with the reference numbers. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,362,919 to Flanders.

Referring to claim 1, Flanders discloses a system including a plurality of semiconductor lasers (110A, 110B); a single multi-mode optical fiber; and a light collecting optics system (102) for collecting laser beams emitted from the plurality of semiconductor lasers and then coupling the collected laser beams to the multi-mode optical fiber. See Fig.1-4 along with their respective portions of the specification.

Allowable Subject Matter

4. Claims 2-54 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 2, 3, 5, 6, 8, 9, 12, 13, 17, 18, 23, 24, 31, 32, 41, and 42, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose a plurality of collimator lenses, each having a first aperture diameter in a first direction and a second aperture diameter larger than the first aperture diameter in a second direction perpendicular to the first direction, and provided so that they correspond to teach of the plurality of the semiconductor lasers.

Referring to claims 4, 10, 14, 19, 25, 33, and 43, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose a block on which the plurality of semiconductor lasers are mounted is divided into a plurality of sub-blocks, and the sub-blocks are bonded together with one another.

Referring to claim 7, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose that the semiconductor lasers are GaN semiconductor lasers.

Referring to claims 11, 15, 21, 27, and 45, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose that the multi-mode

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optical fiber has a core diameter of 50 μm or less and a numerical aperture of 0.3 or less.

Referring to claims 16, 20, 28, 36, and 46, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose that the multi-mode optical fiber has a valued (core diameter x numerical aperture) of 7.5 μm or less.

Referring to claims 22, 26, 29, 37, 38, 42, and 48, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose that the plurality of semiconductor lasers comprise 3 to 10 semiconductor lasers arranged in a row.

Referring to claims 30, 34, 39, 49, and 50, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose that the plurality of semiconductor lasers each have a light-emitting width of 1,5 to 5 μm .

Referring to claims 40 and 44, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose that the plurality of semiconductor lasers are arrayed and fixed two-dimensionally when viewed from a side where the laser beams are received.

Referring to claims 51-54, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose that the multi-mode optical fiber comprises a plurality of multi-mode optical fibers in which at least exit end portions thereof are disposed in one-dimensional array form.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,288,833 to Kasamatsu

This reference discloses an invention that is similar to the claimed invention, including the output of a plurality of semiconductor lasers being multiplexed into a multi-mode optical fiber.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

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KSW

April 23, 2003



Brian Healy
Primary Examiner